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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,844	12/17/2003	Nobuo Ishii	010968.53088US	6085

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EXAMINER

WALBERG, TERESA J

ART UNIT	PAPER NUMBER
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3742

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/736,844	<b>Applicant(s)</b> ISHII ET AL.	
	<b>Examiner</b> Teresa J. Walberg	<b>Art Unit</b> 3742	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5,7 and 9 is/are rejected.
- 7) ☒ Claim(s) 6, 8, 10, and 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>04/19/04</u> . | 6) <input type="checkbox"/> Other: ____  |

### DETAILED ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 5, and 9 are rejected under 35 U.S.C. 102(a) as being anticipated by Tei et al (2002/0011215).

Tei et al disclose a plasma processing apparatus (see Fig. 9) including a plasma processing chamber (101), antenna means (111) for guiding microwaves into the plasma processing chamber (101) and a dielectric member (106) disposed between the antenna means (111) and the plasma chamber (101) wherein a surface of the dielectric member (106) facing the inside of the plasma processing chamber (101) has a projecting shape (see Fig. 9).

With respect to claim 2, the antenna means is a plane antenna having plural slots. See paragraph 0076, lines 2 and 3.

With respect to claim 5, the projecting shape is provided along the circumferential direction and/or radial direction of the dielectric member. See Fig. 9.

With respect to claim 9, the formation of crossings of the projecting shapes is avoided, since the embodiment of Fig. 9 lacks crossing shapes.

3. Claims 1, 5, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Mabuchi et al (6,091,045).

Mabuchi et al disclose a plasma processing apparatus (see Fig. 9) including a plasma processing chamber (12), antenna means (34, 35) for guiding microwaves into the plasma processing chamber (12) and a dielectric member (14) disposed between the antenna means (34, 35) and the plasma chamber (12) wherein a surface of the dielectric member (14) facing the inside of the plasma processing chamber (12) has a projecting shape (see elements 14b in Figs. 9 and 10).

With respect to claim 5, the projecting shape is provided along the circumferential direction and/or radial direction of the dielectric member. See Figs. 9 and 10.

With respect to claim 9, the formation of crossings of the projecting shapes is avoided, since the embodiment of Fig. 9 lacks crossing shapes.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over either Tei et al (2002/0011215) or Mabuchi et al (6,091,045) and further in view of Sun et al (6,432,255).

Tei et al and Mabuchi et al each disclose the claimed structure with the exception of the dielectric member have a mirror-polished surface.

Sun et al teaches providing a mirror polished surface on surfaces exposed to a plasma to make them easier to clean. See column 2, lines 29-34.

It would have been obvious in view of Sun et al to provide a mirror polished surface for the dielectric member of Tei et al or Mabuchi et al in order to make the surface of the dielectric member easier to clean.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 2, 4, and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2 it is unclear what is meant by "(RLSA)". It has been assumed for purposes of this action that this term was not intended to limit the claimed subject matter. It is suggested that the term be deleted. If the term is to remain in the claim, clarification as to its meaning is required.

In claim 4 the phrase "each corner-shaped or edge-shaped portion" lacks antecedent basis. It is suggested that the phrase "the projecting shape includes

corner-shaped or edge-shaped portions and/or crossing portions and-- be inserted after "wherein". Additionally, the phrase "(cross-type shaped portion)" should be deleted as it is unclear whether it is intended to further limit the phrase "crossing portion".

Claim 7 depends from claim 5, which does not provide antecedent for "the crossing portion". If claim 7 is to remain dependent on claim 5, it is suggested that claim 7 be amended to include "the projecting shape includes a crossing portion and" after "wherein".

Appropriate correction is required.

8. Claims 4 and 7 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

9. Claims 6, 8, 10, and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nishikawa et al, Tadera et al, Yanase, Okumura et al, Ohmi et al, and Murakawa et al are cited to show plate structures in plasma chambers.

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Teresa J. Walberg whose telephone number is 571-272-4790. The examiner can normally be reached on M-F 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Teresa J. Walberg  
Primary Examiner  
Art Unit 3742

tjw